

What is claimed is:

1. A multi-carrier transmitter assembly, comprising:
a digital exciter that provides a digital multi-carrier signal from baseband data;
a digital-to-analog converter that converts the digital multi-carrier signal into an analog multi-carrier signal;
a signal distributor that distributes the analog multi-carrier signal into a plurality of analog carrier signals; and
a plurality of antennas, each of the plurality of antennas transmitting at least one of the plurality of analog carrier signals.
2. The assembly of claim 1, the signal distributor comprising at least one filter, the at least one filter being electrically adjustable by the exciter as to change at least one frequency characteristic associated with the at least one filter.
3. The assembly of claim 2, the at least one filter comprising a surface acoustic wave (SAW) filter having at least one electrically actuatable micromechanical structures.
4. The assembly of claim 2, the at least one frequency characteristic comprising a center frequency of a passband associated with the at least one filter.
5. The assembly of claim 2, the at least one frequency characteristic comprising respective center frequencies of a plurality of passbands, the center frequency of each passband being electrically adjustable by the exciter.
6. The assembly of claim 2, the at least one frequency characteristic being a center frequency of a stopband associated with the at least one filter.

7. The assembly of claim 2, the at least one frequency characteristic comprising respective center frequencies of a plurality of stopbands, the center frequency of each stopband being electrically adjustable by the exciter.

8. The assembly of claim 1, the signal distributor comprising a time division demultiplexer.

9. The assembly of claim 1, the signal distributor comprising a plurality of decoders, providing respective despreading codes to a multi-carrier signal.

10. The assembly of claim 1, the exciter and the digital-to-analog converter being located at a first location, and at least one of the plurality of antennas being located at a second location, spatially remote from the first location.

11. The assembly of claim 10, at least one antenna being located at a third location, spatially remote from the first location and the second location.

12. A multi-carrier receiver assembly, comprising:
at least one antenna,, a plurality of analog carrier signals being received at the at least one antenna;
a signal combiner that combines the analog carrier signals at least one antenna into an analog multi-carrier signal;
an analog-to-digital converter that converts the analog multi-carrier signal into a digital multi-carrier signal; and
a digital processing assembly that processes the digital multi-carrier signal to extract information from the multi-carrier signal.

13. The receiver assembly of claim 12, the signal combiner comprising at least one mixer for downconverting analog carrier signals, a given mixer being associated with a respective one of the at least one antennas and having an associated intermediate frequency.

14. The receiver assembly of claim 12, the signal combiner comprising a frequency multiplexer.

15. The receiver assembly of claim 12, the signal combiner comprising a code division multiple access multiplexer.

16. The receiver assembly of claim 12, the signal combiner comprising a plurality of coders that provide respective spreading codes to the analog carrier signals, the respective spreading codes being mutually orthogonal.

17. The receiver assembly of claim 12, the at least one antenna having respective associated tracking assemblies that determine a frequency band associated with an interfering signal.

18. The receiver assembly of claim 17, the at least one antenna having respective associated stopband filters that attenuate the interfering signal in response to the determination of the associated tracking assembly.

19. The receiver assembly of claim 12, the at least one antenna having respective passband filters, the filters having a plurality of passbands, a respective center frequency of each passband being electrically adjustable by the digital processing assembly.

20. The receiver assembly of claim 12, the at least one antenna having respective cancellation assemblies that generate an inverted phase representation of at least one interfering signal received at their respective antennas.

21. The receiver assembly of claim 12, the at least one antenna being one antenna and the signal combiner comprising a bypass, such that a carrier signal from the antenna can bypass the signal combiner.

22. The receiver assembly of claim 21, the at least one antenna having respective associated tracking assemblies that determine a frequency band associated with an interfering signal.

23. The receiver assembly of claim 22, the at least one antenna having respective associated stopband filters that attenuate the interfering signal in response to the determination of the associated tracking assembly.

24. The receiver assembly of claim 21, the at least one antenna having respective passband filters, the filters having a plurality of passbands, a respective center frequency of each passband being electrically adjustable by the digital processing assembly.

25. The receiver assembly of claim 21, the at least one antenna having respective cancellation assemblies that generate an inverted phase representation of at least one interfering signal received at their respective antennas.

26. The receiver assembly of claim 12, the analog-to-digital converter and the digital processing assembly being located at a first location, and a first of the at least one antenna being located at a second location, spatially remote from the first location.

27. The receiver assembly of claim 26, a second of the at least one antenna being located at a third location, spatially remote from the first location and the second location.

28. A multi-carrier transceiver system, comprising:

means for combining a plurality of carrier signals into a combined multi-carrier signal represented in a first domain;

means for converting the combined multi-carrier signal from the first domain to a second domain; and

means for distributing the converted multi-carrier signal into a plurality of signals represented in the second domain.

29. The system of claim 28, the means for converting the multi-carrier signal from a first domain to a second domain comprising means for converting a digital multi-carrier signal into an analog multi-carrier signal.

30. The system of claim 28, the means for converting the multi-carrier signal from a first domain to a second domain comprising means for converting an analog multi-carrier signal into a digital multi-carrier signal.

31. The system of claim 28, further comprising means for determining a frequency band associated with an interfering signal.

32. The system of claim 31, means for attenuating the interfering signal in response to the determination of the associated tracking assembly.

33. The system of claim 28, further comprising means for generating an inverted phase representation of at least one interfering signal associated with the plurality of carrier signals.

34. A method of transmitting a multi-carrier signal, comprising:
generating a digital multi-carrier signal at an exciter;
converting the digital multi-carrier signal into an analog multi-carrier signal;
distributing the analog multi-carrier signal into a plurality of analog signals;
and

providing the plurality of analog signals to respective antennas for transmission.

35. The method of claim 34, the distributing of the analog multi-carrier signal comprising filtering a plurality of copies of the multi-carrier analog signal at respective tunable filters.

36. The method of claim 35, at least one of the tunable filters being a multiband tunable filter.

37. The method of claim 34, the distributing of the analog multi-carrier signal comprising deserializing a plurality of carrier signals comprising the multi-carrier signal.

38. A method of processing a plurality of carrier signals, comprising:
receiving a plurality of analog carrier signals at a plurality of antennas;
combining the plurality of analog carrier signals into a multi-carrier analog signal;
converting the analog multi-carrier signal into a digital multi-carrier signal;
and
processing the digital multi-carrier signal at a digital processing assembly.

39. The method of claim 38, the combining of the plurality of analog carrier signals comprising converting each received carrier signal to a unique frequency.

40. The method of claim 38, the combining of the plurality of analog carrier signals comprising applying a spreading code to each of the analog carrier signals and summing.

41. The method of claim 38, further comprising determining a frequency band associated with an interfering signal.

42. The method of claim 41, further comprising attenuating the interfering signal in response to the determination of the associated tracking assembly.

43. The method of claim 38, further comprising generating an inverted phase representation of at least one interfering signal associated with the plurality of carrier signals.

44. A receiver assembly, comprising:
at least one antenna that receives an analog signal comprising at least one frequency band of interest and at least one frequency band containing an interfering signal;
an analog-to-digital converter that creates a digital representation of the analog signal;
a digital processing component that receives the digital representation of the analog signal and produces a control signal specifying the at least one frequency band containing the interfering signal; and
at least one adjustable filter, electrically adjustable to change at least one frequency characteristic associated with the filter in response to the control signal, that attenuates the specified at least one frequency band within the analog signal.

45. The assembly of claim 44, the attenuation component comprising a stop band filter, being electrically adjustable in response to the control signal as to change a center frequency associated with at least one stopband.

46. The assembly of claim 44, the attenuation component comprising a pass band filter, being electrically adjustable in response to the control signal as to change a center frequency associated with at least one passband.

47. The assembly of claim 44, the at least one antenna comprising a plurality of antennas, each receiving a respective analog signal and having an associated adjustable filter, and the digital processing component receiving a plurality of digital

representations corresponding to the respective analog signals to provide control signals to the respective adjustable filters associated with each antenna.

48. The assembly of claim 47, comprising a signal combiner that combines the analog signals from the plurality of antennas into a multi-carrier signal and an analog-to-digital converter that converts the analog multi-carrier signal into a digital multi-carrier signal.